

### REMARKS/ARGUMENTS

This Response and Amendment responds to the Office Action dated April 21, 2004. Claims 11-16, 18, 19, 21-24 and 35-38 are pending in the present application. Claims 11-16, 18-19 and 28 stand rejected. Claims 21-24 and 35-38 are withdrawn from consideration. No new matter is added by this response. Entry of this response is requested.

**With Respect to the Rejections Under 35 U.S.C. § 103, Paragraphs 13-14 of the Office Action:**

Claims 11-16, 18, 19, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent 6,037,186 to Stimpson and United States Patent 5,787,572 to Toms et. al. for the reasons indicated in paragraphs 13-14 of the Office Action, the Patent and Trademark Office stating that:

...The method of Stimpson does not expressly disclose that the [sp] stabilizing the bundle by embedding it in a matrix. Toms et al. disclose that it is known in the fibre bundle art "stabilized" [sp] the fiber bundle with a fixing matrix such as epoxy resin for cutting (col. 1, lines 7-13). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include embedding the bundle in a matrix as taught by Toms et al. in the method of Stimpson. One of ordinary skill in the art would have been motivated to include embedding the bundle in a matrix in the method of Stimpson since Toms et al. disclose it [sp] is known in the fiber bundle art to stabilized [sp] the fibers with a fixing matrix in order to cut the bundle fibers and Stimpson teaches using a sheath in order to protect the bundle for cutting (Stimpson: col. 8, lines 7-13; Toms: col. 1, lines 7-13). Furthermore, one of ordinary skill in the art would have reasonably expectation [sp] of success in the combination of Stimpson and Toms et al. because using the matrix to fix the bundle for cutting is a well establish [sp] methodology of the fiber bundle art.

The Applicant respectfully traverses the rejections and the above reasoning, because no *prima facie* case of obviousness has been made against claims 11-16, 18, 19, and 28 over United States Patent 6,037,186 to Stimpson and United States Patent 5,787,572 to Toms et. al., as well as for the other reasons discussed below.

The '572 Patent to Toms et al. concerns an improvement on prior art methods used to terminate a bundle of glass fibre-optic fibres to be used as an optical cable to transmit information between the beginning and the end of the cable. The passage cited by the Patent

and Trademark Office from the '572 Patent as the basis for the rejection is from the very beginning of the background section where the '572 describes a prior art method and the problems associated with the prior art method. The passage as a whole reads as follows, with emphasis added on the sentences cited by the Patent and Trademark Office:

**It is known in the fibre bundle art to produce such fibre bundle terminations by the injection of epoxy resin into the fibre bundle at the point at which a termination is to be produced. The epoxy resin sets as a fixing matrix around the glass fibres displacing the air from between the fibres, thus allowing the fibre bundle termination to be produced by cutting and polishing.** The technique is simple and requires little skill on behalf of a worker producing such terminations. However, the use of epoxy resin has disadvantages one of which is that such a termination is limited as to the temperature at which it can operate; it cannot be used with high power or high heat generating light sources. If the termination becomes too hot the epoxy resin will melt and eventually burn which destroys the optical coupling efficiency of the termination.

Applicant believes that the Patent and Trademark Office has erroneously confused this disclosure in the '572 Patent as relevant art due to the use of the phrase "fibre bundle" in the '572 Patent. As indicated above, the "fibre bundle" referred to in the '572 is a bundle of glass fibre-optic fibres used to create an optical cable.

Claim 11 of the present invention, the only independent claim, recites [emphasis added]:

A method of producing high density arrays of target substances comprising sectioning **a bundle of target-strands that has been stabilized by embedding the bundle in a matrix;**

where the target-strands comprise the target substances;

where the location of each target substance within the bundle is noted in a database; and,

where the sectioning results in a **high density array.**

Contrary to the assertion of the United States Patent and Trademark Office, that "it is known in the fibre bundle art 'stabilized' [sp] the fiber bundle with a fixing matrix such as epoxy resin for cutting [the '572 Patent] (col. 1, lines 7-13)," there is no disclosure at all in the '572 Patent regarding stabilizing a fiber bundle with a fixing matrix. As clearly indicated in

the cited passage from the '572 Patent, above, the '572 Patent does not teach stabilizing any bundle by embedding the bundle in a matrix, it explicitly teaches only "[producing] fibre bundle **terminations** by the injection of epoxy resin into the fibre bundle **at the point at which a termination is to be produced...**" [emphasis added]. The prior art method disclosed in the '572 Patent produces a termination in an optical cable to transmit information between the beginning and the end of the cable, not the stabilization of the bundle with a fixing matrix. Further, contrary to the assertion of the United States Patent and Trademark Office, that "[i]t would have been obvious to a person of ordinary skill in the art at the time the invention was made to include embedding the bundle in a matrix as taught by Toms et al. in the method of Stimpson," as discussed above, the '572 Patent does not teach "embedding the bundle in a matrix," only terminating a bundle using epoxy. Hence, no *prima facie* case of obviousness exists.

Additionally, contrary to the assertion of the United States Patent and Trademark Office, that "[o]ne of ordinary skill in the art would have been motivated to include embedding the bundle in a matrix in the method of Stimpson since Toms et al. disclose it [sp] is known in the fiber bundle art to stabilized [sp] the fibers with a fixing matrix in order to cut the bundle fibers and Stimpson teaches using a sheath in order to protect the bundle for cutting (Stimpson: col. 8, lines 7-13; Toms: col. 1, lines 7-13)," there is no motivation whatsoever to combine the disclosures as 1) they are completely non-analogous art, 2) the resin in the '572 Patent is used merely to terminate a bundle not to stabilize the bundle, and 3) the '572 Patent explicitly teaches away from using the resin injection method even to terminate a bundle of glass fibre-optic fibres because of the many disadvantages associated with the method as disclosed in the '572 Patent from col. 1, line 7 through col. 2, line 19. Further, the purpose of the method disclosed in the '572 Patent is to produce an optical cable to transmit information between the beginning and the end of the cable, not to produce high density arrays. No one of ordinary skill in the art would seek to combine these disclosures, even if their combination would have resulted in the present invention, which is clearly NOT the case.

Also, contrary to the assertion of the United States Patent and Trademark Office, that “...one of ordinary skill in the art would have reasonably expectation [sp] of success in the combination of Stimpson and Toms et al. because using the matrix to fix the bundle for cutting is a well establish [sp] methodology of the fiber bundle art,” there would be NO reasonable expectation of success in combining the disclosure of the ‘572 and ‘186 Patents, as combining the disclosure at best would result in termination of a cable of fibres according to Stimpson, not in the generation of a series of arrays. Further, the Patent and Trademark Office’s statement that “using the matrix to fix the bundle for cutting is a well establish [sp] methodology of the fiber bundle art” is merely a wholly unsupported conclusion, certainly not supported by any cited passage in the ‘572 Patent.

Finally, as should now be clear, the part of the fibre-optic bundle that is cut away from the main bundle in the ‘572 Patent is discarded as it has no use as a fibre optic cable, unlike the present invention where the functional part created by the method is the part stabilized by the matrix and cut away from the bundle.

For these reasons, the Applicant believes that no *prima facie* case of obviousness has been made against claims 11-16, 18, 19, and 28 over United States Patent 6,037,186 to Stimpson and United States Patent 5,787,572 to Toms et. al. and that, even if a *prima facie* case of obviousness existed, withdrawal of this rejection is appropriate for the other reasons given above, and withdrawal of these rejections is hereby requested.

**With Respect to the Withdrawal of Claims 21-24 and 35-38:**

Claims 21-24 stand previously withdrawn as being drawn to a nonelected species. Claims 35-38 are indicated as also withdrawn to a nonelected species for the reason given in paragraph 9 of the Office Action. The above claim listing now indicates that claims 35-38 are withdrawn.

As claims 21-24 and 35-38 depend upon claim 11, and claim 11 is now believed to be in condition for allowance for the reasons indicated above, rejoinder of claims 21-24 and 35-38 is hereby requested. If, however, the United States Patent and Trademark Office still

considers claims 21-24 and 35-38 not to be allowable even in view of their dependency upon claim 11, the Applicant authorizes the United States Patent and Trademark Office to cancel claims 21-24 and 35-38 by Examiner's Amendment, if necessary to place the application otherwise in condition for allowance.

### CONCLUSION

Claims 11-16, 18-19 and 28 are now believed to be in condition for allowance for the reasons stated above and a Notice of Allowance is earnestly solicited. Additionally, the Applicant requests reconsideration of the withdrawal of claims 21-24 and claims 35-38. If, however, there remain any issues that can be resolved by telephone with the Applicants representative, the Examiner is encouraged to contact the undersigned directly.

If any extension of time is required, such extension is hereby requested. No fee is believed due in connection with this communication. However, if any fee is due, the Commissioner is hereby authorized to charge payment of the fee associated with this communication to Deposit Account No. 19-2090.

Respectfully submitted,

SHELDON & MAK PC

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